

Application No.: 09/588,242

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Docket No.: 249212024500

REMARKS/ARGUMENTS

In an Office Action dated August 4, 2004, claims 1, 3-10 and 12-38 were rejected. Claims 1 and 17 have been amended. Applicants request reconsideration of the pending claims in view of the present amendment and following remarks.

I. Claims 1, 21 and 33

Claims 1, 21 and 33 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,170,063 (the Golding reference). In an earlier-filed preliminary amendment, Applicants asserted that the Golding reference discloses that a processor and not the controller creates the log entries in the log. In the present Office Action, the Examiner asserts that "the log entry is not actually 'created' until the controller takes the write messages and stores them in the log."

Claim 1 recites, "a circuit for associating a mass storage write command with the time information to create a log entry." Claim 1 also recites that "the circuit queues log entries." Applicants assert that the Golding reference cannot be read in a logically consistent manner to disclose each of these elements of claim 1.

In particular, on one hand, if a log entry in the Golding reference is deemed not to be "created" until a log entry is stored in the log (which is consistent with the Examiner's present position), then the controller in the Golding reference can not be read to correspond to the circuit recited in claim 1 because the controller does not associate "a mass storage write command with the time information to create a log entry," as recited in claim 1.

On the other hand, if a log entry in the Golding reference is deemed to have been "created" when the write command is associated with the time information (which is consistent with claim 1), then the controller in the Golding reference can not be read to correspond to the circuit recited in claim 1 because the controller receives write messages with time stamps from the processor rather than associate "a mass storage write command with the time information to create a log entry," as recited in claim 1. Additionally, the processor in the Golding reference can not be read to correspond to the circuit recited in claim 1 because the processor does not queue log entries.

Claim 21 recites a log-assisted disk, where a sector write is associated with time information to create a log entry, and log entries are queued in a log queue. Claim 33 recites

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“combining each sector write with a time stamp at the log-assisted disk to form a log entry,” and “queuing log entries at the log-assisted disk.” For the reasons set forth above with respect to claim 1, Applicants assert that the Golding reference cannot be read in a logically consistent manner to disclose each of these elements of claims 21 and 33.

Thus, Applicants assert claims 1, 21 and 33 are allowable over the Golding reference.

II. Claims 9 and 20

Claims 9 and 20 were rejected under 35 U.S.C. 102(e) as being anticipated by the Golding reference.

Claim 9 recites, “appending, at the log assisted disk, a time to each of said mass storage write commands to form a log entry,” and “queuing log entries in a log queue at the log-assisted disk.” For the reasons set forth above with regard to claim 1, Applicants assert that the Golding reference cannot be read in a logically consistent manner to disclose each of these elements of claim 9.

Claim 20 recites, “append a time to each of said mass storage write commands to form a log entry at the log-assisted disk,” and “queue log entries in a log queue at the log-assisted disk.” For the reasons set forth above with regard to claim 1, Applicants assert that the Golding reference cannot be read in a logically consistent manner to disclose each of these elements of claim 20.

III. Claim 17

Claim 17 was rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 5,008,786 (the Thatte reference).

Claim 17 has been amended to recite, “writing the snapshot to a storage device on which the mass storage device is being restored.” Note that the snapshot being written was “taken at a point in time earlier than the given time.” Also note that the claim 1 recites, “writing the log entries having timestamps later than the point in time of the snapshot to the storage device on which the mass storage device is being restored.”

As the Examiner asserts in the Office Action, in the Thatte reference, “newly modified data (at the current checkpoint state) that was not in the archived state is copied to the archival medium.” The Thatte reference discloses that “[i]f a disk failure occurs, a new disk can replace the damaged one, and the archived state can be used to initialized[sic] the new disk.” Note that “the

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new disk" rather than the "archival medium" corresponds to the "storage device on which the mass storage device is being restored," as recited in claim 17. The Thatte reference does not disclose "writing the log entries having timestamps later than the point in time of the snap shot" to the new disk.

Thus, Applicants assert that claim 17 is allowable over the Thatte reference.

IV. Claims 3-8, 10, 12-16, 18, 19, 22-32, and 34-38

Applicants assert that claims 3-8, 10, 12-16, 18, 19, 22-32, and 34-38 are allowable for at least the reason that they depend from allowable independent claims.

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V. Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, Applicant petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 249212024500. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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